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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,638

04/21/2006

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TS6457US

5704

23632 7590 09/11/2008
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EXAMINER

SUN, XIUQIN

ART UNIT

PAPER NUMBER

2863

MAIL DATE

DELIVERY MODE

09/11/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/576,638	Applicant(s) DE BREE ET AL.	
	Examiner XIUQUIN SUN	Art Unit 2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1, 2 and 4-17 are rejected under 35 U.S.C. 102(a) as being anticipated by Bakulin et al. (U. S. Pat. No. 6714873).

Regarding claim 1, Bakulin et al. discloses a method of assessing pore fluid pressure behaviour in a region of interest in a subsurface formation below an earth surface (cols. 3-4, lines 63-16), the method comprising: determining a stress value representative of formation stress in a measurement region of the subsurface formation that is displaced from the region of interest (cols. 3-4, lines 63-16; col. 5, lines 38-41); and detecting presence of non-hydrostatic pore fluid pressure in the region of interest using the stress value (col. 1, lines 17-21; col. 2, lines 47-50; col. 5, lines 33-44).

Regarding claim 2, Bakulin et al. discloses: detecting a pressure boundary wherein the pore fluid pressure changes from hydrostatic to non-hydrostatic (Fig. 2; col. 5, lines 33-44).

Regarding claim 4, Bakulin et al. discloses: wherein the fluid pressure in the measurement region is hydrostatic (col. 13, 19-23).

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Regarding claim 5, Bakulin et al. discloses: wherein the measurement region of the subsurface formation is located less deep as seen from the earth surface than the region of interest (Bakulin's method is applicable to a measurement region either above or below the region of interest, see col. 4, lines 5-16).

Regarding claim 6, Bakulin et al. discloses: wherein using the stress value for detecting non-hydrostatic pore fluid pressure in the region of interest comprises inferring an effective stress value representative of the difference between the formation stress in the measurement region and a value of pore fluid pressure in the measurement region (col. 7, lines 10-17).

Regarding claim 7, Bakulin et al. discloses: wherein detecting non-hydrostatic pore fluid pressure in the region of interest comprises using a geo-mechanical model of the subsurface formation (col. 5, lines 33-44).

Regarding claim 8, Bakulin et al. discloses: wherein determining the stress value comprises determining a principal stress value representative of the horizontal formation stress in the measurement region (cols. 3-4, lines 63-16; col. 5, lines 38-41).

Regarding claim 9, Bakulin et al. discloses: wherein determining the stress value comprises performing a geophysical measurement, such as a seismic measurement or a sonic measurement, to obtain geophysical data, and processing the geophysical data to obtain the stress value (cols. 3-4, lines 63-16; col. 5, lines 38-41).

Regarding claim 10, Bakulin et al. discloses: wherein determining the stress value comprises determining two or more stress values each at a different depth in the measurement region (col. 4, lines 5-16).

Regarding claim 11, Bakulin et al. discloses: inferring effective stress values for each of the stress values, which effective stress values are representative of the difference between the formation stress at the corresponding depths in the measurement region and the value of the pore fluid pressure at substantially the same depth in the measurement region (col. 7, lines 10-17).

Regarding claim 12, Bakulin et al. discloses: inferring a variation of the two or more effective stress values as a function of their depths and comparing to a nominal value (col. 4, lines 5-16; col. 13, lines 18-25).

Regarding claim 13, Bakulin et al. discloses: wherein prior to assessing pore fluid pressure behaviour in the region of interest: a drill bit is provided on a lower end of a drill string; and the lower end of the drill string is lowered in a bore hole in the subsurface formation, and wherein during assessing the pore fluid pressure behaviour in the region of interest: the drill bit is operated to deepen the hole (col. 3, lines 52-62; col. 4, lines 17-30 and 59-64).

Regarding claim 14, Bakulin et al. discloses a system for assessing pore fluid pressure behaviour in a region of interest in a subsurface formation below an earth surface (cols. 3-4, lines 63-16), the system comprising: a measurement arrangement for producing a signal representing a stress value representative of the formation stress in a measurement region of the subsurface formation (cols. 3-4, lines 63-16; col. 5, lines 38-41); and a signal processing device arranged to receive the signal and utilize the signal to detect presence of non-hydrostatic pore fluid pressure in the region of interest,

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which region of interest is located displaced from the measurement region (Fig. 2; col. 1, lines 17-21; col. 2, lines 47-50; col. 5, lines 33-44).

Regarding claim 15, Bakulin et al. discloses: wherein the measurement system includes at least a measurement-while-drilling device that is installable on a drill pipe for lowering into a bore hole such that the measurement-while-drilling device can reach or approach the measurement region (col. 3, lines 52-62; col. 4, lines 17-30 and 59-64).

Regarding claim 16, Bakulin et al. discloses: wherein the measurement region of the subsurface formation is located above the region of interest (Bakulin's method is applicable to a measurement region either above or below the region of interest, see col. 4, lines 5-16).

Regarding claim 17, Bakulin et al. discloses: wherein the region of interest is ahead of the measurement region (Bakulin's method is applicable to a region of interest ahead of the measurement region, see col. 4, lines 5-16).

Allowable Subject Matter

3. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reasons for Allowance

4. The following is an examiner's statement of reasons for allowance:

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The primary reason for the allowance of claim 3 is the inclusion of the limitation that said detecting presence of non-hydrostatic fluid pressure comprises detecting a precursor zone wherein the pore fluid pressure is hydrostatically determined and a stress gradient increases. It is this limitation found in the claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Response to Arguments

5. Applicant's arguments received 06/19/08 with respect to claims 2-9 and 21-27 have been considered but are moot in view of the new ground(s) of rejection.

Claims 1, 2 and 4-17 are rejected as new prior art reference (U. S. Pat. No. 6714873 to Bakulin et al.) has been found to teach the claimed invention recited in these claims. Detailed response is given in section 2 as set forth above in this Office action.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiuqin Sun whose telephone number is (571)272-2280. The examiner can normally be reached on 6:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571)272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/X. S./

Examiner, Art Unit 2863

/Tung S. Lau/

Tung S. Lau, Art Unit 2863

Primary Examiner

September 8, 2008